

ON CEMENTS, ARTIFICIAL STONE, AND PLASTIC COMPOSITIONS.

SIR,—Having seen much in your useful journal for and against compositions of various kinds, and as the advertisement of an article is not always to be depended on, I, as a practical man, wish to give an opinion of the merits of such materials, for much that has been said is prejudiced, far from being practical, and tends to injure a very numerous body of men. Such materials are inexpensive, compared with stone and wood; and in very many parts of a building, both for exterior and interior, in mouldings, carvings, &c., give an appearance which otherwise could not be attained in buildings generally with limited means; without them, we should have streets of brick-fronted houses void of any architectural embellishment. But most cements, especially exterior, require great care in using them, and good sand, which is often neglected in the modern use, and hence composition may be too often classed, as one of your correspondents says, with dishonest materials; it is, and has been of late years, most shamefully ill-used by builders of crack houses, capitalists, and taskmasters, even in some of the finest streets of London, as Regent-street,—what a state that is in! Much of the cement is sold and used at a price which prevents it from being properly done, so that it cannot possibly endure the weather long; but when of good quality, it may be warranted to endure for a century. The way to do it is, pay the fair value, and make a tradesman responsible for the work he does; then may be obtained good work, and it will then become an honest material; but some has failed, owing to the carelessness and inexperience of workmen, as there are very many plasterers who do not understand using it in a proper manner (not even Roman cement, much more other cements). Compare some that has been done well,—for instance, many country mansions done by Bernasconi, forty or fifty years since,—with some of the soft stones, of which much has been justly said in *THE BUILDER*. I do not say it is better than stone, but it is better than bad stone; and where expense is no object, I do not recommend cement, but good stone, such as can be warranted to endure uninjured by the weather for a century.

It has been inferred that the ancients possessed the art of making a superior cement; but many of our cements, I think, are equal in hardness and durability, and harden by time—such as the Roman Cement, Atkinson's Cement, Pulham's Portland Stone Cement or Artificial Stone, and Metallic Cement. My object in writing this is to expose the abuse of cements, and to contradict erroneous and injurious statements; for to do away with cements would be a severe check to architectural embellishment, as very little would be done in stone, owing to the expense; and also to show the utility of cements to those who are unacquainted with them.

Roman Cement has been in use about fifty years, and where good and properly used, remains uninjured by the weather, and is excellent for water-works and the best for general purposes: it has been in very general use, and much done by Bernasconi has had the best test of its durability on many country mansions; but this cement is the most abused, being used for cheapness' sake, so that it cannot possibly endure long, and is open to fraud, in consequence of the various prices and quality; its colour is the only objection to it for stucco, as it requires frequent colouring; but if used as a rough coat and finished with a light-coloured cement, it answers the purpose better than any other. Many have the idea that it is not so good as it used to be, but that is wrong, as the best may be had by paying the price.

Atkinson's or Mulgrave Cement, is a superior kind of Roman cement, made from a lighter-coloured stone on the estate of Lord Normanby, and is better adapted for stucco, mouldings, and ornaments; for the latter purpose, it is the best cement; but if plenty of sand is not used, it is liable to crack. Its colour is that of dark Bath stone; it was a very expensive material and not in very general use; but the price is considerably reduced lately by the agents, Messrs. Wyatt, Parker, and Co., and as it will take a greater quantity of sand than any other, it is now tolerably reasonable.

Pulham's Portland Stone Cement, or artificial stone, is so called from its near resemblance

to Portland stone in colour, hardness, and durability; its natural colour is that of Portland stone, and therefore it requires no artificial colouring. It has stood the test of twenty-four years' use, and remains perfect; it has even deceived the trade, the imitation is so complete; it is excellent both for exterior and interior purposes of stucco and mouldings, and for fountains, vases, and even floors, &c.; is capable of being trowelled to a very smooth face like marble, and hardens by the influence of the atmosphere. Simple water washing is sufficient to clean it when dirty, and it does not vegetate so much as stone. It is an excellent finishing for Roman cement; its use has been allowed by the Church Building Commissioners for the exterior of a new church at West Hyde, in Hertfordshire.

Much might be done in restoring our ancient edifices and dilapidated stone-work generally in buildings; for where a stone is only decayed on the face, an inch thick of cement would answer the purpose instead of cutting out the stone; and where a stone is too much decayed it may be cut out and replaced with bricks laid in cement and covered to imitate the stone in any colour. Many of our beautiful structures are going to destruction in consequence of the great expense of restoring with stone, and it may be done to advantage at one-third or fourth the expense of stone, and answer every purpose. Much that has been done in restoring with cement has failed, owing to the incautious manner in which it has been used; nothing requires more care, especially on clunch and limestone, of which many churches are built; but I will return to my subject, although I could say much more on this point.

Metallic Cement, or sand, a mixture of blue lias lime and metallic powder, has been in use about ten years, and is an excellent material for exterior and interior stucco mouldings, &c. It is very hard, and promises to endure for a great length of time. Its colour is that of dark stone, and it is very suitable for water-works and other purposes. It is almost impossible to separate stones and bricks joined with it, and is excellent for concrete. It may be used to advantage with chalk-lime for interior purposes of stucco, increases the hardness, and may be trowelled to a very smooth surface for painting on. The metallic substance improves the hardness of other limes and cements, but is best with lias lime.

Mastic or Oil Cement, has been in use about forty years, and is a material well adapted for interior purposes of stucco and plain mouldings for painting on, especially where expedition is required, as it may be painted on the next day after it has been laid on. Its tenacity is so great as to adhere to the smoothest substance, even to glass, but it will not answer for exterior purposes where exposed to the heat of the sun, as the oil is drawn out and it becomes soft and peels off. It is very expensive when properly executed, and requires to be often painted.

Keene's Cement, manufactured by J. B. White and Sons, of Milbank-street, has been in extensive use four or five years, and is an excellent material for internal purposes, where hardness is required, being as hard as stone or marble, as for dados, panelling, architraves, inlaid paving, chimney-pieces, skirtings, balustrades for staircase, &c., and for hall floors, scagliola, and many purposes of wood, it is superior; and I think it is as hard as the cement of the ancients, but requires to be worked with great care, as it has failed in places from being improperly used, especially from being put on wet brickwork. A great quantity has been used at the Hall of Commerce, Threadneedle-street, and many other public buildings. The office of the patentee is paved with it, and is difficult to discriminate from Portland stone. It will not endure the weather, nor is it good for damp situations.

Martin's Cement is very similar and will answer the same purposes as Keene's Cement for interior work: it stands well.

Red Cement has been in very limited use several years, and is not much known: it is an excellent material for making ornamental chimney-shafts, ornamental ridges in the Tudor style, especially ridging for the ornamental or Tudor tiles and mouldings in imitation of brick, of which it is a complete imitation when pointed: it may be made at comparatively little expense. When done well, it may be warranted for a great length of time.

Maucl's Portland Cement has not been in use sufficient time to test its merits, but appears to stand well for stucco and mouldings, and is of a superior colour to Roman cement: a good specimen of it may be seen in Threadneedle-street.

John's Patent Stucco Paint Cement is a kind of oil cement superior to mastic; it has not been in use sufficient time to test its merits, but appears to stand well and to answer the purpose of stucco. It will adhere to most substances, even to glass, and may be used throughout the winter, which other cements cannot be: its colour is like dark Bath stone. The stucco paint appears to be very good for painting cements.

Blue Lias Lime Cement is an excellent material for building purposes where it can get dry, but will not do for stucco or outside plastering, as it is very crumbly under the surface and liable to crack. The lime slackened has the same fault, but will stand for stucco in a dry situation.

Interior Plastering generally.—In writing about cements, &c., I cannot forbear saying a little in reply to an article in *THE BUILDER*, by a correspondent, "J. W.," who calls an ornamented ceiling a palpable falsity, and says that it contains noxious vapours, not knowing, I suppose, that there are simple means of ventilation. I should be glad to know in what respect it is a palpable falsity, and if it is, why has so much been done in that way in almost every house that is built, noble or simple: and most of which could not be accomplished with other materials than plastic composition of some sort. I certainly admire wood-carvings, &c. in their place, and where expense is no object; but even then, why increase the materials for fire? I should be glad to see some of his (as he says) more honest and ingeniously and equally elaborated timber soffits by the side of an ordinary plaster enrichment, such as is used in good buildings; it is impossible it could vie with it, let alone expense, which in wood-carving is immense. There is no material in existence that can be wrought with such relief, facility, and perfection, as plaster for decoration of buildings; and if great hardness is required, use Keene's or Martin's Cement. What can there be dishonest in a plaster ceiling? It is not intended generally to deceive or to appear to be any thing other than what it is (although mouldings and ceilings may be, and are grained to imitate oak in the old English or Tudor style, as for beams, ribs, &c.); and can any other material be made so available, and answer the purpose so well, as plastic compositions, and at so trifling a cost? and what has rendered our modern public, as well as private buildings so beautiful? Plastering endures after timber has failed, as is a well-known fact, proved in many of our ancient mansions, when plastering was very inferior, and materials such as we now have unknown. As to safety, I should like to know in what way it is unsafe, and to have proof of it where respectable tradesmen have been employed, or an architect. It is more enduring and equally safe as wood; but the abuse of the materials, both in quality and workmanship, may well bring disgrace upon it: the manner in which some of it is done, chiefly by builders of crack houses, capitalists, and plasterers, is scarcely to be credited (London mod to wit); for when finished, it is like a man who has on a good outside or great coat,—you cannot see what is underneath. There is, I think, no trade open to more fraud than the plasterer's; where a man cares not for character or reputation, he can do work at half the price of a respectable man who warrants his work; but it is sure to be detected in a little time. The price being cut down causes bad work; but as I said with respect to cement, pay fair value and employ respectable tradesmen who understand the nature of the materials and workmanship, and then good work may be obtained. Work done badly often looks for a little time to a common observer little inferior to the other; but make every tradesman responsible for his work and the material he uses, and we shall see what plaster-work will be. This would enable a respectable tradesman to improve in his art: but I must not trespass more on your space.

I am, Sir, &c.

Huddesdon. JAMES PULHAM.

•• We do not pledge ourselves to the opinions of our correspondent, but give them place as those of a practical man.—Ed.